CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

SECRET

25X1 [redacted] 25X1

COUNTRY	USSR (Leningrad Oblast)	REPORT NO.	[redacted]
SUBJECT	Activities at SKB 143, Leningrad	DATE DISTR.	6 October 1953
	25X1	NO. OF PAGES	1 25X1
DATE OF INFO.	[redacted]	REQUIREMENT NO.	[redacted]
PLACE ACQUIRED	[redacted]	REFERENCES	

[redacted]

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25X1

Correction

25X1 An information report with the above heading [redacted]

25X1 [redacted] was issued on 20 August 1953. This report

25X1 erroneously made reference [redacted]

25X1 [redacted] in the body of the report. [redacted]

25X1 [redacted]

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25X1

STATE	#x	ARMY	#x	NAVY	#x	AIR	#x	FBI		AEC						

[redacted]

(Note: Washington Distribution Indicated By "X"; Field Distribution By "#".)

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25X1

COUNTRY	USSR (Leningrad Oblast)	REPORT NO.	25X1
SUBJECT	Activities at SKB 143, Leningrad	DATE DISTR.	20 August 1953
		NO. OF PAGES	10
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25X1

1. the assembly building in the Sudomekh shipyard. At this building all the actual work of assembly of the prototype motor was done by Soviet technicians. The building of some of the parts and fittings was also performed by Soviets in the Sudomekh machine shops. Dettke and Nathaus were called in occasionally to help with the assembly. Either Krage or Sztatecsny was at the building every day. 25X1

2.

a. Redrawing of designs and plans. The Germans at Glueckauf used the overlay system. The Soviets seemed to be unable to comprehend this method. The Germans, therefore, had to reorganize all the overlays which had been made at 25X1 Blankenburg and make separate drawings of each. They became hopelessly entangled in this project, and designs and plans piled up until they were literally coming out of the windows. They eventually had to request the Soviets to send to Blankenburg for their original rough plans and diagrams and start all over again. The numbering of the drawings

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was not done according to any particular method. Every drawing which was finished was registered in a drawing book which was kept in the archives. These drawings were given numbers as they were entered in the book. Parts or position numbers, which began with one, were then assigned. Following are two examples [redacted] 25X1

M 10 048 Part 1-42 Piping plans
M 10 049 Parts 1-16 Coupling

b. Translation of legends from German to Russian: This was a difficult task, since only a few [redacted] knew enough Russian to be of any help, and the terminology was rather inadequate. 25X1

c. Plans of tests of dissociation chamber:

(1) Operational functioning: The chamber was placed in a pit in the yard with all the necessary connections. It was then operated to see if it would function, that the pipe fittings were tight, and that it did not blow up.

(2) Temperatures were taken with a thermocouple. Operating temperatures ran somewhere around 450 C to 525 C.

(3) Pressures were taken with an ordinary Bourdan type gauge. None of the German personnel were allowed in the vicinity when these tests were going on. The above information was obtained through haphazard conversations with the Soviets after the tests were over, and when the Soviets were attempting to get hints as to how to overcome difficulties which came up during the tests.

The combustion and dissociation chambers were made (cast) in Leipzig by an unknown firm, and finished by Wolff Buckau in Madgeburg. All the mechanical fittings such as valves, etc., were made by Schumann Armaturen Werke in Leipzig. In 1946-47, Sztatecsny and a Soviet official (officer) made the rounds of all East Zone firms which could make these various parts. Orders were placed for delivery to Leningrad.

d. Plans for tests of combustion and dissociation chamber assembly: Chambers were set up in a special room with explosion baffles. Tests stands were designed by the group. Again, all tests were made without any of the Germans being present. [redacted] 25X1

[redacted] 25X1

25X1 [redacted] the H_2O_2 was brought into the shipyard and up to the building in a special railroad tank car. It was stored in white metal tanks which were probably aluminum. [redacted] special 25X1

25X1 fuel oil [redacted] Sztatecsny was not acquainted with or assisted in its procurement, either in the East Zone

25X1 or the USSR. [redacted] fuel oil, and not alcohol was used. [redacted] Trompke 25X1 gave the Soviets the necessary thermodynamic data from

previous tests which had been made by Walter at Kiel.

[redacted] 25X1

e. Installation and assembly of the prototype Walter motor:

(1) First, only the turbine was installed in the mock-up engine room. The turbine was one which had been captured from the Germans or, rather, appropriated after the end of the war. It had been made by the firm of Brueckner and Canis, Dresden. [redacted] 25X1
[redacted] 25X1 The turbine was supplied by steam from a combustion and dissociation chamber on the test stands. They were still testing the chambers and apparently still feared an explosion which might damage their one and only turbine of German manufacture.

(2) Second, the dissociation and combustion chambers were installed in the engine room, along with all of the auxiliary equipment. [redacted] 25X1
[redacted] 25X1
[redacted] Sztatecsny 25X1 and Menssen were asked to stand outside the room when the tests were performed. This was apparently a safeguard in case of trouble;
[redacted] 25X1
[redacted] There were 25X1 observation ports in the walls of the engine room proper, and it might have been possible for Sztatecsny or Menssen to have surreptitiously observed various dials or gauges [redacted] 25X1
[redacted] /See diagram, page 10, which 25X1 is a schematic diagram with legend of the motor assembly as well as the auxiliary equipment./ A dynamometer was installed in the engine room. It occupied the exact space of the reduction gear housing, which, as yet, was not installed. All tests were, thus, made at this stage without reduction gearing. This project was stopped in December 1950, when the group was started on their "cooling off" period.

f. In the summer of 1950, during the initial turbine tests, the Soviets forgot to start the water spray into the combustion chamber immediately upon starting the reaction. The steam thus became much hotter than otherwise, and ruined some of the turbine blades as well as damaging the turbine shaft. Many microscopically small cracks appeared on the surface, which had been in contact with the steam. All the Soviet experts who were called in on consultation were dubious about running the turbine again. However, in November 1950 [redacted] 25X1
25X1 [redacted] full power tests had been run, and
25X1 [redacted] the Soviets had ordered a new turbine from a local factory in Leningrad. [redacted] the final 25X1 acceptance of full-load tests with reduction gearing must have been greatly delayed by this accident.

g. Main turbine condenser tests: The purpose of these tests was to see if all the turbine exhaust steam was condensed to water. This was under the conditions that the turbine and condenser only were installed in the engine room. Steam was furnished by the chambers on the test stands. These tests determined the proper flow of condenser cooling water so that the above condition might be realized. They had trouble with the CO_2 exhaust pump system. It was difficult to prevent some of the condensate from getting into the Lysholm type CO_2 pumps and leaking out through the pump housing packing. This water also decreased the efficiency of the CO_2 pumps.

h. Condenser tests, Main turbine, with combustion and dissociation chambers, was installed in the engine room.

i. CO_2 compressor tests: These tests were covered in items g. and h. and in conjunction with those items.

j. Final tests on the completely assembled motor, turbine, chambers, dynomometer, etc., were made about July of 1950, during which time the accident described previously occurred.

k. Each piece of machinery was built and tested separately. After tests were made, the Germans were called in and asked to make minor changes in the designs. The Soviets could not follow a design and build the part without getting something different from what the design called for. The Germans then had to incorporate these mistakes into a new set of plans. In such matters as piping, for instance, the finished job, after the Soviet technicians finished with it, bore little or no resemblance to the original plans.

l. Preparation for the installation of reduction gearing. This entailed the relocation of the dynomometer and the location of the gear housing base, which in turn served as the cover for the reduction gear lubricating oil reservoir.

3. In the summer of 1950, the Soviets made their first and only suggestion for a change in the design. They suggested that a "heat trap" (heat capacitor) be placed between the dissociation chamber and the combustion chamber. This trap or heat sink was to consist of a long steel cylinder filled with solid steel spheres. Satoteeany was only too glad to have his group make this change in design for the Soviets, but the German designers of the group, Griebsch, Schumacher, Keppel, and Menssen, refused to have anything to do with it. They felt certain that there were great possibilities for an eventual explosion if this change was carried out. The Soviets planned to pass the steam and oxygen from the dissociation chamber through this heat trap only during the first few minutes of each run, and then, after the water spray into the combustion chamber had been started, to by-pass the heat trap during the remainder of the run. The German designers felt sure that there was great possibility of some undissociated H_2O_2 passing into

the trap and forming, at some future time, a film on the steel spheres and gradually collecting until it might cause an explosion upon first starting the reaction. Sztatecsny then had to explain to the Soviets why his group would not carry out this change in design. The Soviets then went ahead and made the change themselves.

25X1 [redacted] 25X1

4. [redacted]

25X1 5. [redacted] possibility of deliberate sabotage
25X1 by the Soviets [redacted] This is a distinct possibility. After the heat trap had been installed by the Soviets, Antipin (fnu) called Sztatecsny down to the assembly building and showed him the motor operating. Antipin then again tried to get Sztatecsny to have his group "sponsor" the heat trap idea. Sztatecsny refused, since by now, his own group had apparently convinced him of the danger. Now Col. Antipin was on the block, as it were, because of the accident with the turbine. It might have been entirely possible that Slotopolskiy, (fnu), or Brahmann (fnu), or both, could have suggested to Antipin to ask the Germans to make this change at the point suggested, hoping that eventually another "accident" might occur. It would be necessary to get the Germans to make the change in the design, since Antipin had no comeback otherwise, since his own men did all the previous assembling. He would then have someone else to blame. Of course, the original accident occurred before the heat trap was added. How the Soviets would have got around this difficulty is not known, but it is felt that their ingenuity would have risen to the occasion. Col. Antipin did not know enough about the motor to have formulated this idea, if true, by himself, since he was an administrator only, and not technically knowledgeable.

6. In December 1950, when all the work on the project was stopped, the reduction gears had not yet been installed. [redacted] two of the reduction gear assemblies in their housings in the yard next to the assembly building. They had been built by some company in Erfurt. They were double reduction, helical gears. The Soviets had been instructed not to disassemble them upon their delivery, but some of the high naval officers wanted to see what they looked like, so they were taken apart. When they tried to assemble them again, they used sledge hammers and files, etc. [redacted] 25X1 25X1

7. In December 1950, all work of the project was stopped. [redacted] 25X1 25X1 25X1 nor were any of the test results ever available. [redacted] 25X1 25X1 These were such projects as measuring the shutter speed of the Soviet copies of the Leica or Contax cameras, and making their own "sonic" washing machines from the hub caps of the Soviet automobile, Pobeda, and a speaker coil, etc. There was a well-developed black market of parts, tools, and equipment which the Soviet workers had stolen from various plants and factories. Most of the electrical material and parts were of German manufacture. Some American material and parts were available, and this always commanded the highest prices.

8. [redacted] 25X1

At the end of the war, the Germans had thousands of specially built Igelit (polyvinyl chloride) plastic bags for containing H_2O_2. Some of these were to be used in the prototype motor installation in Leningrad. When the Germans arrived they found that the recesses

in the final hull design were not quite of the right size to contain these bags. Also, the supports for the bags were not as the bag design allowed. They then had to design new bags and bag supports. They also had to change the support design of a "rocking" test tank which they had brought to Leningrad. This tank was to be used in testing the "seaworthiness" of the bags and bag supports.

e. Proposed design for a horizontal dissociation chamber. The Germans wanted to substitute welded construction for cast construction on these chambers. The Soviets were not interested and stopped the work.

f. Design of dynomometer foundation, to be located outside the engine room. This would have been necessary at the time of the installation of the reduction.

g. Proposed design of propeller shaft bearing location when item f. above was to be effected.

h. Proposed design of pipe connections to the dynomometer when item f. above was to be effected.

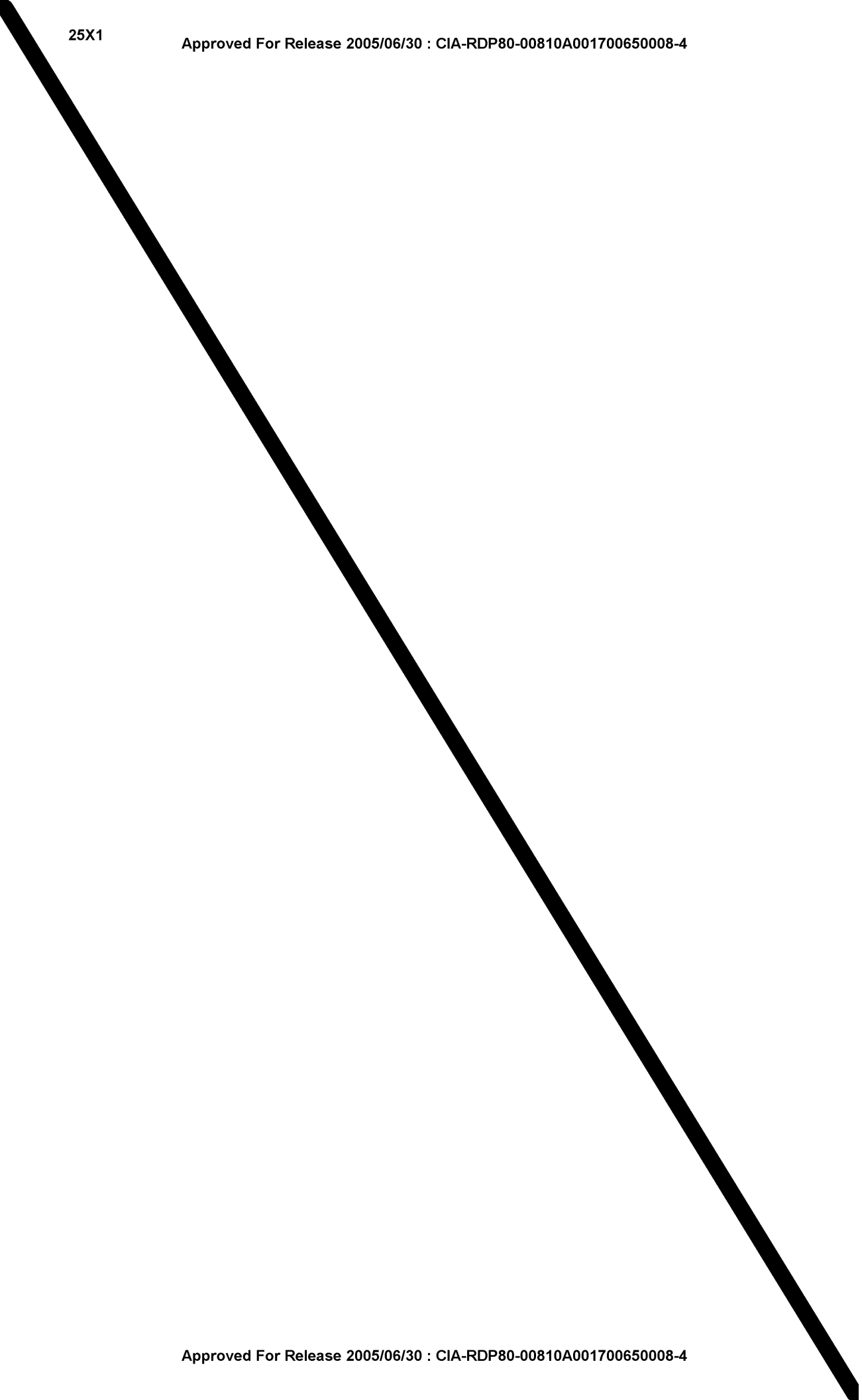
i. Design of lubricating oil pump location for tests of turbine and reduction gearing, which would have been run after the reduction gearing assembly had been installed.

25X1 9. [redacted] characteristics or composition of the catalyst. It consisted of cylinders, light buff in color, about 10 to 12 millimeters long and five millimeters in diameter. After removal from the chamber, they were covered with a whitish deposit. Each charge had a ridiculously short life, which was measured in hours. [redacted] 25X1
After removal from the chamber, the cylinders remained unbroken. Some tests were made with the cylinders broken into pieces, in order to increase the surface area.

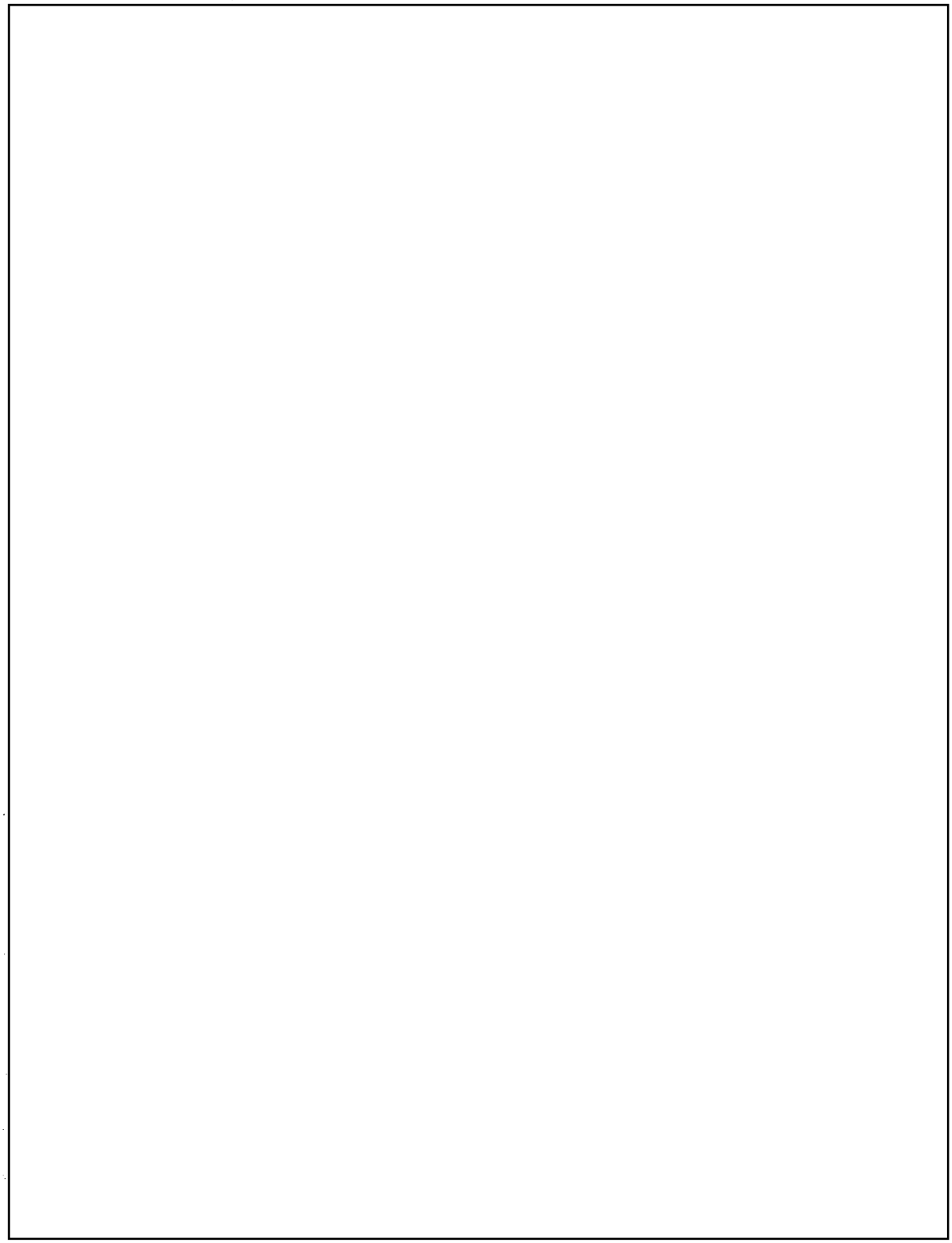
25X1 10. [redacted] Lawitschka [redacted] was stationed at Oranienbaum, some 40 miles east of Leningrad. Lawitschka came frequently to visit Sztatecsny. These visits were social, but could easily 25X1
have turned into "business" visits. [redacted] 25X1

It was common talk that Prof. Ernst Luebke had been taken to the USSR by mistake, and had been kept sitting around with nothing to do for seven years.

11. [redacted] 25X1



[redacted] 25X1
25X1



Page 10 ~~~~ Diagram of Mock-up Pressure Hull.

25X1 1. [redacted] Comment. This may be Kurt Lawitschka or Lawitzka, Dipl. Ing., a German, who worked for the Soviets on torpedoes, vacuum tubes, explosives, and/or mechanical engineer-propulsion.

25X1

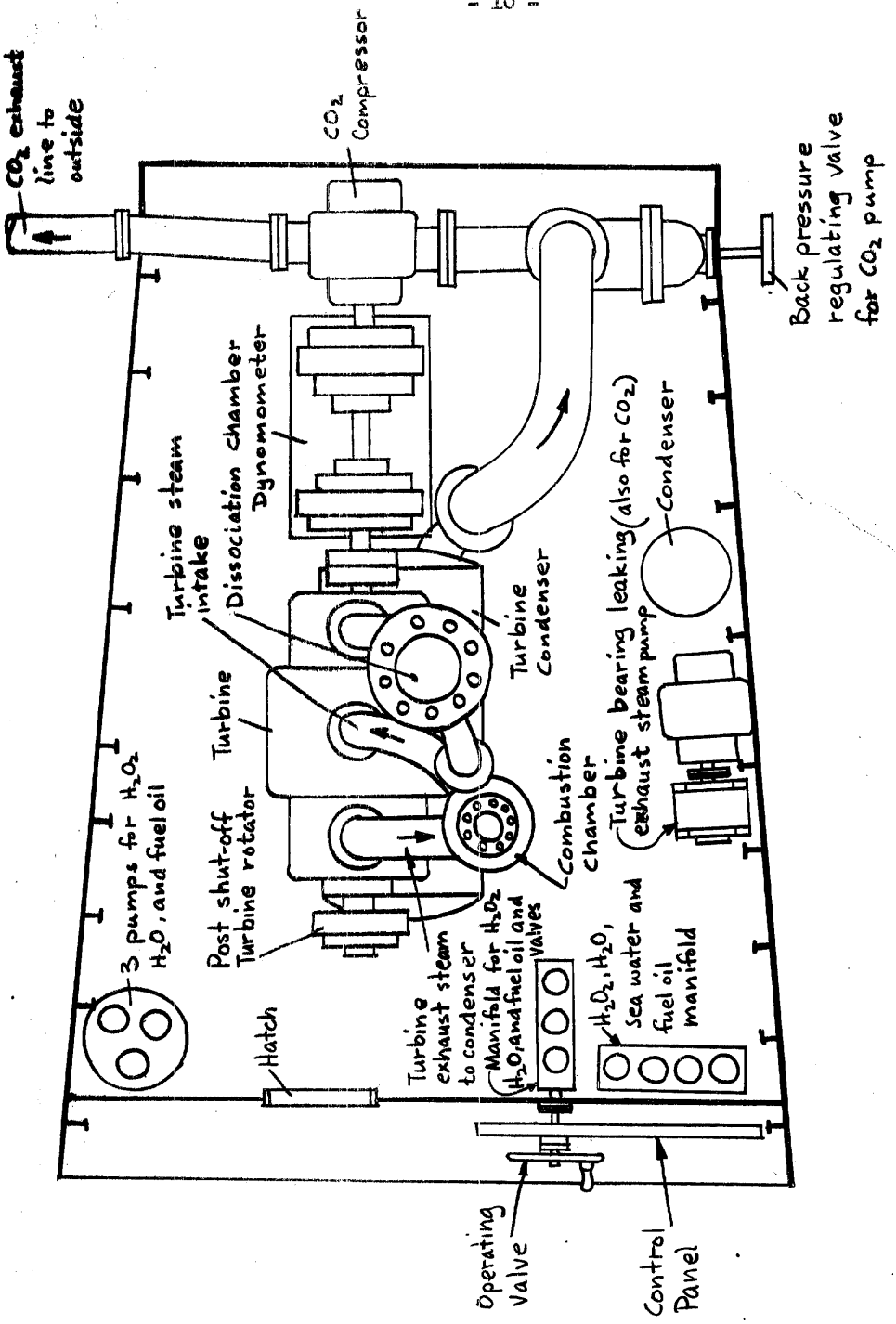


DIAGRAM of MOCK-UP PRESSURE HULL